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Forest  
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Shasta-Trinity  
National Forests

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Subject: Evaluation of Sanitation of Port-Orford-cedar along  
Grayback Road, Happy Camp RD (FPM Report No. N91-7)

To: Forest Supervisor, Klamath National Forest

The following provides information for the analysis on removing Port-Orford-cedars (POC) along the Grayback Road on the Happy Camp Ranger District. This evaluation provides the biological information required to implement sanitation efforts to reduce the probability of introducing Phytophthora lateralis, cause of Port-Orford-cedar root disease.

The Grayback Road approximately parallels Indian Creek for most of its route on Happy Camp RD. POC is scattered along Indian Creek and on some of its tributaries. The southern extent of POC is near the bottom of Grayback Road where the road crosses the creek. The northern extent is on Des Moines Creek. Most of the POC occurs as a few individuals, but there are larger groups of trees present in wet areas. All size classes of trees can be found.

The objective of removing POC from along a strip on either side of the Grayback Road on the District is to reduce the chance of the introduction of P. lateralis by reducing the chance that the fungus and host will come in contact. This road travels through generally infested areas in Oregon over the summit into California and the Happy Camp District. It gets considerable use from vehicles, including logging trucks and equipment, during much of the year. The presence of POC along the edge of the road provides host material for the fungus if the fungus is introduced. P. lateralis is soil and water-borne and can be carried on vehicles and equipment in soil. As the amount of traffic increases along this road, especially during the wet part of the year, so does the chance of infested soil carried on vehicles being dropped off near POC. Just the presence of infested soil does not assure infection. Rather stringent requirements as far as free water, temperature, and proximity to POC roots must be met for infection to occur. Obviously though, the more times this happens, the greater the likelihood of successful germination and infection of POC by the fungus. By removing POC from along the road, one of the basic requirements for successful introduction, presence of the host, is eliminated.

The following criteria are provided as guidelines for removing POC from along the road on the Happy Camp RD. Some flexibility should be maintained in their implementation based on the specific site situation, taking into consideration the effects of slope and tree size. For example, areas of POC that are on benches that extend from the road and that accumulate water might have a somewhat greater distance than an absolute 50 feet. These guidelines are based on surveys that examined where POC root disease is found in relation to roads and drainages. All distances are slope distances.





### Upslope

Remove all POC within 20 feet of road edge

Where cut slopes are greater than 5 feet in height, remove POC only between road edge and top of cut slope

### Downslope

Remove all POC within 50 feet of road edge

In downslope drainages for a distance of 75 feet from the road edge, remove all POC whose roots may extend into the drainage

All POC, regardless of size, need to be cut within the treatment areas. When possible, seedlings should be pulled to assure that none are left with a small branch near the base. Based on past experiences, removal of all submerchantable POC should be done first. Following this slashing activity, larger trees can be felled. The slash produced does not have to be treated in any special way to reduce root disease risk. Dead above-ground POC material does not effectively serve as a host for P. lateralis. Felled green trees do not pose a risk of being infected.

Green POC material larger than 3 inches in diameter may be attacked by redwood bark beetles, most likely Phloeosinus sequoiae. Eggs are laid during the spring and summer on green host material. Breeding success is highest in green host material which no longer has any root contact because it has been cut, broken, or uprooted. The only standing trees which are commonly attacked are those which have been severely stressed by drought, mechanical damage, or water ponding. If enough green POC stem or bole material to constitute several square feet of cambium surface are left on the ground, a local cedar bark beetle population will build up. When this large population emerges, it can overwhelm and kill a single healthy POC or small group in the local vicinity (a few feet to less than 1/10 mile). Although the tree(s) are killed, attacks on healthy POC usually also cause the cedar bark beetle populations to crash. Any of the following slash modifications should prevent POC mortality due to cedar bark beetle buildups:

1. Remove all POC stems over 3 inches diameter to a site at least 1/4 mile from the nearest living POC.
2. Chip all POC stems over 3 inches diameter.
3. Burn all POC stems over 3 inches diameter within 6 months of cutting.

Attacks and beetle development will be slow during the late fall and winter, but POC will remain "fresh" for a longer period of time. Leaving slash untreated for more than 6 months at any time of year is likely to contribute to an increase in beetle populations and increased risk for mortality of POC.

The above guidelines are for the uninfested road on Happy Camp RD. Removal of POC along the road on the Illinois Valley RD will be addressed separately in conjunction with Region 6 FPM.





Forest Supervisor, Klamath NF

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If you have any questions about this evaluation or need further assistance, please contact me at (916)-246-5101.

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